

## CLAIMS

1. A device for a continuously operated dilution of a slurry sample, through which device the slurry sample is fed directly into a continuously operated  
5 optical analyzer, such as a grain size analyzer, and which device comprises elements for feeding the slurry sample, elements for feeding diluting liquid and elements for removing solids contained in the slurry, as well as elements for discharging both the liquid contained in the slurry and the liquid used for dilution, **characterized** in that the device comprises at least one downwardly  
10 narrowing chamber (2,31) that is connected to the analyzer measurement cell (3, 34) so that two opposite walls (10, 32) of the chamber (2, 31) are essentially parallel both with respect to each other and with respect to the respective walls (21, 35) of the measurement cell (3, 34).
- 15 2. A device according to claim 1, **characterized** in that in the device, there is installed at least one liquid conduit (13, 39) provided with a nozzle element (16, 40) in order to feed diluting liquid into the chamber (2, 31) and in order to advantageously agitate the liquid contained in the chamber.
- 20 3. A device according to claim 2, **characterized** in that the liquid conduit (13, 39) is installed symmetrically with respect to the walls (10, 32; 9, 37) of the chamber (2, 31).
4. A device according to claim 2, **characterized** in that the liquid conduit (13,  
25 39) is provided with a nozzle element (16, 40).
5. A device according any of the preceding claims, **characterized** in that the device comprises two downwardly narrowing chambers (1, 2) that are in liquid connection with each other and are at least partly filled with liquid.

6. A device according to claim 5, **characterized** in that the first and second chambers (1, 2) of the device are mutually arranged so that the bottom part (5) of the first chamber is connected to the top part (7) of the second chamber.
- 5 7. A device according to claim 5 or 6, **characterized** in that the cross-sectional area of the flow aperture of the top part (7) of the second chamber is larger than the cross-sectional area of the flow aperture of the bottom part (5) of the first chamber.
- 10 8. A device according to any of the claims 5 – 7, **characterized** in that the liquid conduit (13) includes nozzle elements (15, 16) comprising one or several nozzles for feeding diluting liquid into both chambers (1, 2) in order to advantageously agitate the liquid contained in the chambers.